

PATENT  
App. Ser. No.: 10/600,383  
Att. Dkt. No. ROC920030172US1  
PS Ref. No.: IBMK/30172

**IN THE CLAIMS:**

Please cancel claim 2, and amend the claims as follows:

1. (Currently amended) A computer-implemented method for referencing a data-selection plurality of data points, from a collection of data, comprising:  
creating a-reference to an annotation associated with the data-selection plurality of data points;  
creating an edge definition for the data-selection plurality of data points comprising sufficient information [[to]] which defines at least two edges that bind the data-selection plurality of data points wherein the edge definition comprises a fewer number of data points than the plurality of data points; and  
associating the edge definition with the reference annotation.
2. (Canceled)
3. (Currently amended) The computer-implemented method of claim 1, wherein associating the edge definition with the reference annotation comprises creating an index for the reference annotation and storing the edge definition with the index.
4. (Currently amended) The computer-implemented method of claim 1, wherein the data-selection plurality of data points comprises a discontinuous set of data points.
5. (Currently amended) The computer-implemented method of claim 4, wherein creating the edge definition comprises:  
partitioning the data-selection plurality of data points into sections of contiguous data points; and  
creating an edge definition for each section of contiguous data points, the edge definition for each section containing sufficient information [[to]] which defines one or more bounding edges of the corresponding section.

## PATENT

App. Ser. No.: 10/600,383  
Atty. Dkt. No. ROC920030172US1  
PS Ref. No.: IBMK/30172

6. (Currently amended) The computer-implemented method of claim 1, wherein the edge definition comprises a list of data points defining a horizontal edge and a vertical edge of ~~[[the]]~~ a two-dimensional array, each data point specified by a row value and a column value.
7. (Currently amended) The computer-implemented method of claim 1, wherein the edge definition comprises a list of row values and a list of column values, the lists combinable to generate a set of data points defining a horizontal edge.
8. (Currently amended) The computer-implemented method of claim 1, wherein the ~~collection of data~~ plurality of data points comprises at least three dimensions.
9. (Currently amended) The computer-implemented method of claim 8, wherein the ~~data selection~~ plurality of data points is bound by a surface of a sphere.
10. (Currently amended) The computer-implemented method of claim 9, wherein the edge definition comprises a point of origin and a radius of the sphere.
11. (Currently amended) A computer-readable storage medium containing a program which, when executed by a processor, performs operations comprising:  
receiving a first selection of data comprising a plurality of data points and  
spanning at least two columns and at least two rows of an at least two-dimensional collection of data; ~~[[and]]~~  
creating an edge definition for the first selection of data ~~comprising sufficient information to~~ which defines a horizontal edge spanning the at least two columns and a vertical edge spanning the at least two rows wherein the edge definition comprises a fewer number of data points than the first selection of data [[.]] ; and wherein the edge definition is associated with an annotation created for the first selection of data.
12. (Currently amended) The computer-readable storage medium of claim 11, wherein:  
the first selection of data comprises a discontinuous set of data points;

## PATENT

App. Ser. No.: 10/600,383  
Atty. Dkt. No. ROC920030172US1  
PS Ref. No.: IBMK/30172

creating an edge definition for the first selection of data comprises partitioning the selection into sections of contiguous data points; and

the edge definition comprises ~~sufficient information to~~ data points which define a horizontal edge and a vertical edge of each section of contiguous data points.

13. (Currently amended) The computer-readable storage medium of claim 11, wherein the operations further comprise:

creating an index for the first selection of data; and  
storing the index with the edge definition in the edge definition table.

14. (Currently amended) The computer-readable storage medium of claim 13, wherein the operations further comprise creating an annotation record comprising [[an]] the annotation created for the first selection of data and the index.

15. (Currently amended) The computer-readable storage medium of claim 13, wherein the operations further comprise:

receiving a request for annotations for a second selection of data;  
determining if the second selection of data is contained, at least partially, within the first selection of data, based on the edge definition for the first selection of data; and  
if so, retrieving the annotation created for the first selection of data, using the index created for the first selection of data and returning the annotation created for the first selection of data.

16. (Currently amended) The computer-readable storage medium of claim 15, wherein the operations further comprise:

determining if the second selection of data is contained, at least partially, within other selections of data, based on corresponding edge definitions for the other selections of data; and  
if so, retrieving annotations associated with the other selections of data, using indexes created for the other selections of data, and returning the annotations for the other selections of data.

**PATENT**

App. Ser. No.: 10/600,383  
Atty. Dkt. No. ROC920030172US1  
PS Ref. No.: IBMK/30172

17. (Currently amended) An annotation system comprising:  
an annotation database;  
an edge definition table; and  
an executable component configured to create an edge definition for a selection of data comprising a plurality of data points, the edge definition comprising sufficient information to data points which define one or more bounding edges of the selection of data wherein the edge definition comprises a fewer number of data points than the selection of data, create an index for the selection of data, store the edge definition and index for the selection of data in the edge definition table, and store, in the annotation database, an annotation record comprising an annotation for the selection of data and the index.
18. (Currently Amended) The annotation system of claim 17, wherein the edge definition comprises sufficient information to data points which define a three dimensional surface that contains the selection of data.
19. (Original) The annotation system of claim 18, wherein the edge definition comprises a point of origin and a radius of a sphere that contains the selection of data.
20. (Original) The annotation system of claim 17, wherein the executable component is configured to:  
receive, from an application program, a request for annotations associated with a selection of data specified in the request;  
obtain, from the edge definition table, indexes for edge definitions at least partially containing the selection of data specified in the request;  
retrieve annotations from the annotation database, using the indexes obtained;  
and  
return the annotations retrieved to the requesting application program.
21. (Currently Amended) The annotation system of claim 17, wherein:  
the selection of data spans at least two rows and two columns of data; and

**PATENT**

App. Ser. No.: 10/600,383  
Atty. Dkt. No. ROC920030172US1  
PS Ref. No.: IBMK/30172

the edge definition for the selection of data comprises ~~sufficient information to~~  
data points which define a horizontal edge spanning the at least two columns and a  
vertical edge spanning the at least two rows.

22. (Original) The annotation system of claim 21, wherein the edge definition for  
the selection of data comprises data points along the horizontal and vertical edges,  
each data point defined by a row value and a column value.

23. (Original) The annotation system of claim 21, wherein the edge definition for  
the selection of data comprises a list of row values and a list of column values,  
combinable to generate data points along the horizontal and vertical edges of the data  
selection.

24. (Original) The annotation system of claim 21, wherein the executable  
component is further configured to:

detect a change to a collection of data within an area of data defined by a stored  
edge definition; and

provide an indication to a user of the change.

25. (Original) The annotation system of claim 24, wherein the change comprises  
at least one of an insertion of a row, a deletion of a row, an insertion of a column, or a  
deletion of a column.

26. (Original) The annotation system of claim 25, wherein the executable  
component is further configured to provide the user with the option of updating the  
stored edge definition to reflect the change.

27. (Original) The annotation system of claim 25, wherein the executable  
component is further configured to provide the user with the option of deleting an  
annotation associated with the stored edge definition.

**PATENT**

App. Ser. No.: 10/600,383  
Atty. Dkt. No. ROC920030172US1  
PS Ref. No.: IBMK/30172

28. (Original) The annotation system of claim 25, wherein the executable component is further configured to provide the user with the option of viewing an annotation associated with the stored edge definition.